UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,172	01/25/2002	Edward J. Dalgewicz III	004756.00018	8448

22907 7590 10/04/2004

BANNER & WITCOFF
1001 G STREET N W
SUITE 1100
WASHINGTON, DC 20001

EXAMINER	
ROBERTSON, JEFFREY	

ART UNIT	PAPER NUMBER
1712	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/055,172	DALGEWICZ ET AL.	
	Examiner	Art Unit	
	Jeffrey B. Robertson	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *21,22 and 25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20,23,24 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. It is noted that the present application has been transferred to the current examiner as a result of the retirement of the previous examiner.

2. In view of the appeal brief filed on 7/15/2004, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

3. It is noted that claims 21, 22, and 25 remain withdrawn as a result of the restriction requirement of 1/28/2003.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 26 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. For claim 26, the limitation of "wherein said composition maintains dimensional stability during extended periods at 212°F in the absence of reinforcing fillers" does not appear to have support in the original specification. This negative limitation appears to have been imported from the Patel declaration of 11/19/2002 in comparison with the prior art. See paragraph 8 of the declaration. There does not appear to be support in the original specification for this limitation.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-20, 23, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson et al. (EP 0838501 A) in view of Akagi et al. (U.S. Patent No. 4,344,874), and Wainer (U.S. Patent No. 4,000,229).

For claims 1, 20, and 26, Nelson teaches blends of polyester, ethylene acrylate copolymer and ethylene glycidyl acrylate copolymer. See page 4, lines 20-50. Here, for claim 1, 2, 20, and 26, Nelson teaches that the bulk polymers are polyesters and prefers PET. For claims 15-19, Nelson teaches that the intrinsic viscosities of the polyesters are between 0.4-1.4. See page 4, line 56 through page 5, line 2.

In the last two Examples set forth in Table 2, pages 8 and 9, Nelson sets forth components that fall within the additive (Component D) and CES (Component B) definitions set forth by applicant. See page 7, lines 3-8. For claims 3-5, Component D is a copolymer of ethylene and methylacrylate where the acrylate is present in an amount of 30% of the copolymer. For claims 6 and 7, in Table 2, the amount of Component D added is 14% and 16% of the composition. For claims 8-12, Component

B corresponds to the CES component that is present in an amount of 4% and 6% of the composition. Component B is a terpolymer of ethylene/methylmethacrylate/glycidyl methacrylate with a glycidyl level of 5% by weight.

Additionally, at page 5, line 3, Nelson discloses nucleating agents as conventional additives.

Nelson fails to expressly teach the level of crystallinity or dimensional stability set forth by applicant in claims 1, 20, 23, 24, and 26.

Akagi teaches that in order to increase dimensional stability and deflection temperature, it is necessary to increase levels of crystallinity in PET resins. Akagi also teaches that nucleating agents are used to increase crystallinity. See col. 1, lines 24-29 and lines 49-64.

Wainer teaches the use of nucleating agents to increase the crystallinity of PET injected molded articles. See col. 1, lines 9-35. As shown in Table 3 cols. 21-22, Wainer teaches levels of crystallinity in PET resins of at least 15% and including levels above 20%.

Nelson, Akagi, and Wainer are analogous art in that they all teach injected-molded polyester compositions that may contain nucleating agents.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a nucleating agent for its art recognized purpose of promoting crystallinity of PET and improving mechanical properties. Levels of crystallinity of a least 15% would have been obvious to one of ordinary skill in the art when promoting

crystallinity to improve dimensional stability and deflection temperature, and would result in the required deflection temperatures claimed by applicant.

10. Claims 1-7, 10-20, 23, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Origasa et al. (English Translation of JP 01-247,454) in view of Akagi et al. (U.S. Patent No. 4,344,874), and Wainer (U.S. Patent No. 4,000,229).

For claims 1, 20, and 26, Origasa teaches blends of polyester, ethylene acrylate copolymer and ethylene glycidyl acrylate copolymer. See the paragraph bridging pages 3 and 4 and the second full paragraph on page 4. Here, for claim 1, 2, 20, and 26, Origasa teaches that the bulk polymers are polyesters and prefers PET. For claims 15-19, Origasa teaches that the intrinsic viscosities of the polyesters are between 0.5-3. See page 4, third full paragraph.

In the Examples set forth in Table 3, pages 11 and 12, Origasa sets forth components that fall within the additive (component (c)) and CES (component (b)) definitions set forth by applicant. See page 7, lines 3-8. For claims 3-5, component (c) is a copolymer of ethylene and methacrylic acid where the acrylate is present in an amount of 10-60% of the copolymer. See page 6, second full paragraph. For claims 6 and 7, in Table 3, the amount of component (c) added is 10% and 13% of the composition. For claims 8 and 9, component (b) corresponds to the CES component that is present in an amount of 4% and 6% of the composition. Component (b) is a copolymer of ethylene/glycidyl methacrylate.

Additionally, at page 7, line 3, Origasa discloses nucleating agents as conventional additives.

Origasa fails to expressly teach the level of crystallinity or dimensional stability set forth by applicant in claims 1, 20, 23, 24, and 26.

Akagi teaches that in order to increase dimensional stability and deflection temperature, it is necessary to increase levels of crystallinity in PET resins. Akagi also teaches that nucleating agents are used to increase crystallinity. See col. 1, lines 24-29 and lines 49-64.

Wainer teaches the use of nucleating agents to increase the crystallinity of PET injected molded articles. See col. 1, lines 9-35. As shown in Table 3, cols. 21-22, Wainer teaches levels of crystallinity in PET resins of at least 15% and including levels above 20%.

Origasa, Akagi, and Wainer are analogous art in that they all teach injected-molded polyester compositions that may contain nucleating agents.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a nucleating agent for its art recognized purpose of promoting crystallinity of PET and improving mechanical properties. Levels of crystallinity of a least 15% would have been obvious to one of ordinary skill in the art when promoting crystallinity to improve dimensional stability and deflection temperature, and would result in the required deflection temperatures claimed by applicant.

Response to Arguments

11. Applicant's arguments, see Appeal Brief, filed 7/15/2004, with respect to the rejection(s)of claim(s) 1-20, 23, 24 and 26 under 25 USC 102/10 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Akagi et al. (U.S. Patent No. 4,344,874), and Wainer (U.S. Patent No. 4,000,229). This response addresses applicant's arguments made in section (8) of the appeal brief filed 7/15/2004.

Applicant argues that in EP '051, the compositions are injected molded at temperatures that are well below the glass transition temperatures of the polymers and that as a result there is no thermal crystallinity introduced into the molded compositions. Applicant argues that the Patel declaration demonstrates this. Although the examiner agrees that the Patel declaration shows that the polymers of EP '051 are amorphous, the examiner does not agree that these polymers are processed well below the glass transition temperature. On page 6, lines 30-37, EP '051 sets forth that the molding temperatures are between 260 and 290°C. This appears to be above the Tg of polyethylene terephthalate, which as indicated by applicant in the specification on page 19, paragraph [059], is about 70°C. Therefore, the examiner does not find this argument persuasive.

Regarding the reproducibility of the heat deflection temperatures, the examiner agrees that the Patel declaration shows that the heat deflection temperatures of EP '051 are not reproducible. As a result, the rejection based on the EP '051 reference alone

has been withdrawn so far as the rationale that the crystallinity and heat deflection temperatures required by applicant are inherent to the Examples set forth in EP '051 has been overcome.

Applicant also argues that EP '051 provides no guidance to impart thermal crystallinity to the composition. Applicant argues that the Akagi and Wainer references would not provide motivation to modify the compositions of EP '051 to provide the crystallinity set forth by applicant. Applicant first contends that Akagi in col. 1, lines 31-39 is seeking to impart dimensional stability so that compositions can withstand post-annealing treatments. Applicant attempts to distinguish the present application in that thermal crystallinity is imparted to eliminate the need for annealing. In response, the examiner's position is that this is not an accurate statement of the Akagi reference. Indeed, in applicant's cited passage Akagi states that these post-treatment methods are not desirable. Furthermore, the body of the Akagi reference does not mention any annealing treatments. As set forth above, the Akagi reference teaches the desirability of incorporating nucleating agents into the polyester compositions to induce levels of crystallinity imparting thermal resistance and dimensional stability. The Wainer reference is consistent with this teaching.

Applicant argues that Wainer and Akagi demonstrate the need for thermal treatment to impart crystallinity and that this rebuts the position that the incorporation of nucleating agents into the compositions taught by EP '051 under the molding conditions set forth in the reference would result in levels of crystallinity and heat deflection temperature set forth by applicant. The examiner disagrees with this argument because

through the incorporation of nucleating agents, an additive specifically named by EP '051, crystallization levels are imparted at the molding temperatures set forth by the reference. This is due to the molding temperatures being above the Tg of the PET polymers and the well-known recognition that this incorporation imparts crystallinity as recognized by Akagi and Wainer.

Regarding the arguments pertaining to JP '454 reference presented by applicant, as set above with respect to the EP '051 reference, the rationale based on the compositions inherently possessing the crystallinity requirements has been overcome. In addition, applicant argues that no thermal treatments are suggested by the JP '454 reference. However, as with EP '051, the molding temperatures are above the Tg of the polymers (see the paragraph bridging pages 7 and 8) and therefore thermal treatments are taking place in the course of molding the compositions.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (571) 272-1092. The examiner can normally be reached on Mon-Fri 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey B. Robertson
Primary Examiner
Art Unit 1712

JBR

RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700